

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-48. (Canceled)

49. (New) A method for obtaining an optimized immunomodulatory polynucleotide, comprising:

a) creating a library of mutant polynucleotides from (1) a set of one or more nucleic acids encoding a B7-1 (CD80) protein or (2) a set of one or more nucleic acids encoding a B7-2 (CD86) protein, wherein nucleic acids of the set differ from each other in at least two nucleotides; and

b) screening the library to identify an optimized mutant polynucleotide that encodes a mutant B7-1 or mutant B7-2 protein which is a costimulator having (1) an improved ability to activate a T cell response induced by a genetic vaccine vector, (2) an increased activity through CD28, and (3) a decreased activity through CTLA-4 compared to a B7-1 or B7-2 protein encoded by a nucleic acid from which the library was created;

whereby optimization is achieved by recursive sequence recombination.